

CALIFORNIA APHIDIDÆ  
NEW CLOUDY-VEINED SPECIES

BY E. O. ESSIG

The generic position of certain cloudy-veined aphids, of which the familiar violet-infesting species described as *Rhopalosiphum violæ* by Pergande (1900) is an example, has been somewhat uncertain up to the present time. The recent discovery of two new species has necessitated an attempt to clear up the problem. Pergande's species has at various times been relegated to the genera *Neotoxoptera* (Theobald, 1915; Baker, 1920), *Fullawayella* (Baker, 1919), and *Idiopterus* (Hottes and Frison, 1931). The genus *Rhopalosiphum* lacks the prominent antennal tubercles. The genus *Fullawayella* was erected by Del Guercio (1911) for *Macrosiphum kirkaldyi* Fullaway (1910). In view of the fact that this species proved to be a synonym of *Idiopterus nephrolepidis* Davis (1909), which is monotypic, *Fullawayella* has no standing and must be discarded, which eliminates it from further consideration. Likewise *Neotoxoptera*, erected by Theobald (1915) for an aberrant form of what has proved to be the species described on violet by Pergande, must be discarded because it did not adequately characterize the species. Based as it was upon an unusual specimen in which the media vein of the fore wing had but a single branch, thus simulating *Toxoptera*, it cannot now be used for species in which this vein has two branches and must therefore be eliminated. This brings us to the genus *Micromyzus* van der Goot (1917) of which *M. nigrum* van der Goot is the type species. A study of the description and illustrations of this genus and species indicates that the species considered in this paper should be placed in *Micromyzus*. This genus is briefly characterized by having well-developed antennal tubercles, normal aphid-type wing venation, cloudy wing veins, rather long cornicles, which are swollen posteriorly and have distinct flanged openings, and a subcylindrical cauda somewhat constricted beyond the base. Named species which should fall in the genus are *Micromyzus nigrum* van der Goot and *M. violæ* Pergande (Fig. 1). To these should be added the new ones described in this paper.

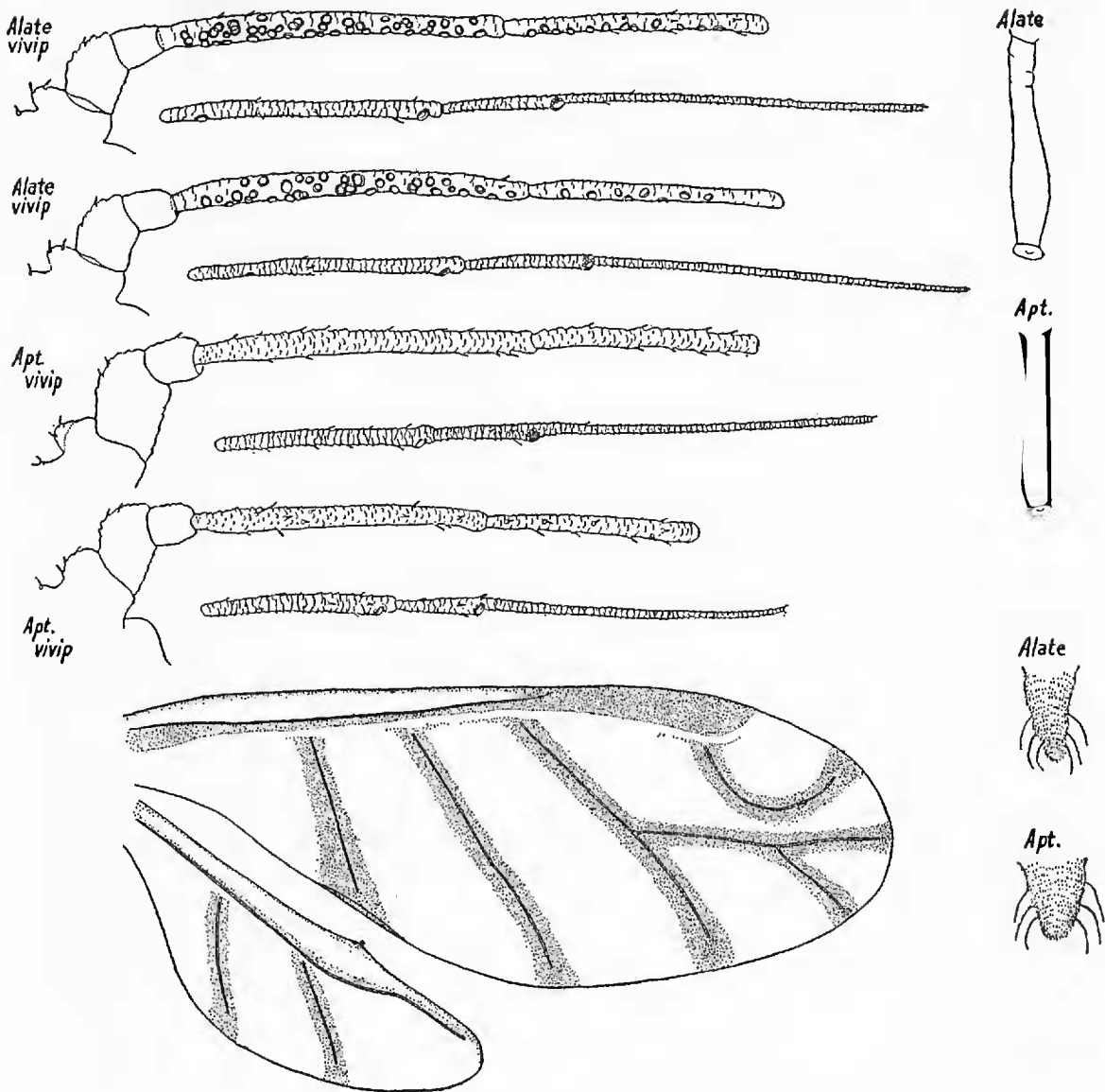


Fig. 1. The violet aphid, *Micromyzus violæ* (Pergande).

### THE ONION APHID

#### *Micromyzus alliumcepa*, Essig, n. sp.

*Apterous viviparous female.* Medium-sized, somewhat robust and often broad and depressed dorsally. Color varying from deep magenta-red to almost black, the surface highly polished and shining. The antennal segments I, II, the apical portion of V, and all of VI, all of the femora, excepting the bases, the apices of the tibiæ, and the tarsi, are dusky or black. Length of body, of the larger specimens, 2.1 mm., width 1.2 mm. Antennæ arising from rather prominent frontal tubercles which are particularly noticeable in this form. Length of the segments: I, 0.11 mm.; II, 0.07

mm.; III, 0.55 mm.; IV, 0.35 mm.; V, 0.30 mm.; VI, base 0.15 mm., unguis 0.46 mm.; total 1.99 mm. Normal sensoria appear on segments V and VI as illustrated. Rostrum acute, extending to the second coxæ. Cornicles paler than the body in living forms; with wide base, constricted throughout the basal half, then gradually swelling beyond the middle, and again receding to the smallest diameter just before the flanged openings; length 0.35 mm., width 0.11 mm. Cauda narrowly conical in shape, with or without a slight constriction, and with three pairs of rather long incurved marginal hairs.

*Alate viviparous female.* Of average size and normal shape. Color very dark red with the head, antennæ, portions of the thorax, the coxæ, apices of the femora and tibiæ, and the tarsi dusky or black. Length 1.6 mm., width 0.7 mm. The inner margins of the prominent frontal tubercles and antennal segment I are gibbous and somewhat serrated. Antennæ longer than the body with many secondary circular and subcircular sensoria distributed as follows: III, 30-42; IV, 21-27 (rarely 5-10); V, 6-9 (usually 6); and the usual ones on VI. Lengths of the segments: I, 0.10 mm.; II, 0.10 mm.; III, 0.60 mm.; IV, 0.45 mm.; V, 0.35 mm.; VI, base 0.17 mm.; unguis 0.60 mm.; total 2.37 mm. Wings with normal aphis-type venation; veins all heavily clouded blackish. In the fore wings the radial sector (Rs) is variable in length and the amount of curvature, but it is usually semi-circular and closely approaches the media (M) as shown in Fig. 2. The veins are frequently modified in curious ways, which peculiarity appears quite characteristic of aphids with cloudy veins and probably accounts for the abnormality encountered by Theobald (1915) in his *Neotoxoptera violæ*. The cornicles and cauda are quite similar in form to those in the apteræ as shown in Fig. 2. The former are 0.30 mm. long and the latter 0.15 mm.

This species is closely related to *Micromyzus violæ* (Per-gande) (Fig. 1) and *M. oliveri* Essig, n. sp. from which it is distinguished by the characters shown in the key at the end.

*Micromyzus alliumcepa* Essig is a distinct and interesting new species. It was first collected December 17, 1927, by the writer on some dry onion sets purchased from a Los Angeles seedsman for planting in the University of California greenhouse at Berkeley, California. Only apterous forms were present at that time and, although the infested onions were observed throughout the growing period, the aphid completely disappeared without reproduction. It was again observed by one of my students, S. J. Oliver, in a small backyard garden in Oakland, California, March 24, 1935, where leek plants were infested.

A number of alate and apterous females were collected at that time, but a second visit some weeks later failed to find a single surviving specimen. On April 1, 1935, the writer was fortunate enough to discover a third infestation in a small garden in Woodland, California, through the aid of W. D. Norton, Specialist in Agricultural Extension. Here the aphids fairly swarmed over a few onion plants which had almost succumbed to their attacks. These plants were grown from sets of unknown origin. The owner of the garden stated that some leek plants had already been killed in March and that chives were ruined by the same aphid during the previous season. Although many inquiries have been made concerning its distribution in California and in other parts of the country, no further information has been received, and its origin is still shrouded in obscurity.

The descriptions have been drawn from 163 specimens

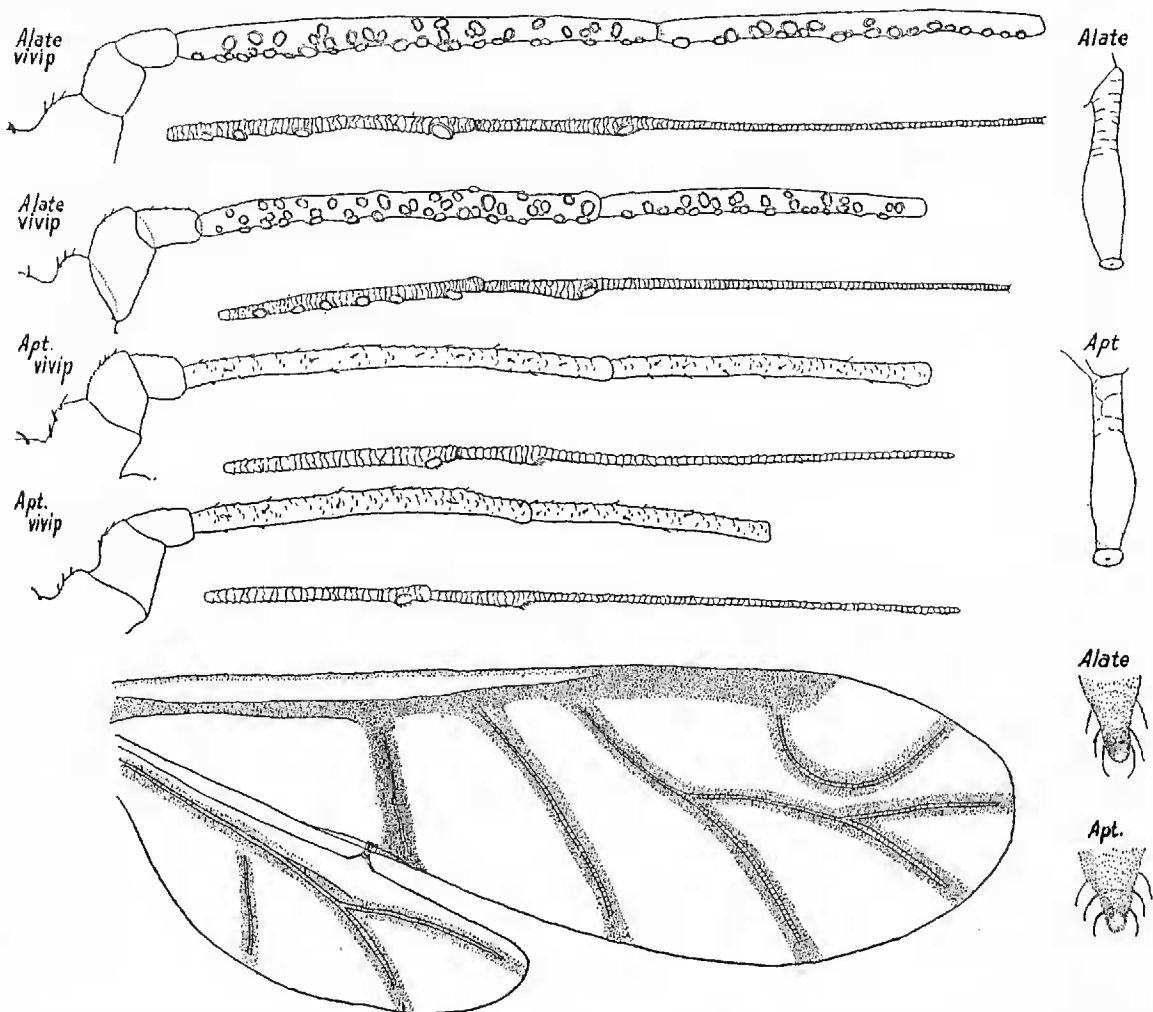


Fig. 2. The onion aphid, *Micromyzus alliumcepa* Essig, n. sp.



mounted on 29 slides designated as cotypes in the author's collection, and a number are in the collections of S. J. Oliver and other students.

### THE CLOUDY-VEINED MARIGOLD APHID

#### *Micromyzus oliveri*, Essig, n. sp.

*Apterous viviparous female.* Rather more slender than the onion aphid, dark reddish, appearing black, somewhat shining or dull with portions of the antennæ legs, and cornicles pale. Length of body 1.90 mm., width 1.15 mm. Frontal tubercles prominent, gibbous, and roughened. The antennæ almost equal the body in length; pale excepting the base of segment V and all of I and VI, which are dusky. The usual permanent sensoria occur on V and VI. Segment I is gibbous and the entire surface roughened or serrated. Length of segments: I, 0.09 mm.; II, 0.06 mm.; III, 0.45 mm.; IV, 0.34 mm.; V, 0.28 mm.; VI base 0.14 mm., unguis 0.50 mm.; total 1.86 mm. Rostrum acute, terminal segment distinct, extending just beyond the 3rd coxæ. Cornicles pale, tips dusky in living forms; with wide base, constricted basally and swollen throughout the apical two-thirds; narrowing at apex and with flanged openings; length 0.27 mm. Cauda conical or somewhat triangular, slightly constricted just beyond the middle, marginal hairs rather inconspicuous; length 0.10 mm.

*Alate viviparous female.* Shining dark-red appearing black in living forms; dark magenta in mounted specimens with black markings on the head, antennæ, thorax, legs, and abdomen. Length of body 2.01 mm., width 0.80 mm. Frontal tubercles prominent and gibbous. Antennæ just about as long as the body; dark throughout; segments I and II with roughened surface; III with from 15 to 21 secondary sensoria arranged mostly along the outer margin; IV occasionally with a single sensorium; V and VI with normal permanent sensoria only; length of segments: I, 0.10 mm.; II, 0.07 mm.; III, 0.50 mm.; IV, 0.36 mm.; V, 0.32 mm.; VI base, 0.15 mm.; unguis, 0.51 mm.; total, 2.01 mm. The dark markings on the dorsum and sides of the abdomen are quite characteristic of this species and appear distinctly in specimens cleared in KOH. The cornicles are similar

to those in the apteræ, the swelling being most prominent along the inner margins; length 0.26 mm. The cauda is much like that of the apteræ, length 0.11 mm.

This species was discovered by S. J. Oliver, for whom it is named, on the underside of the lower and older leaves of the common English, or pot marigold, *Calendula officinalis* Linn., growing in a small garden at Clovis, Fresno County, California, March 30, 1935. It has not been observed elsewhere. Its relation to *Micromyzus alliumcepa* Essig, n. sp. is shown in the key to species at the end of the paper.

Described from a series of 130 individuals mounted on slides and designated as cotypes in the author's collection. Other

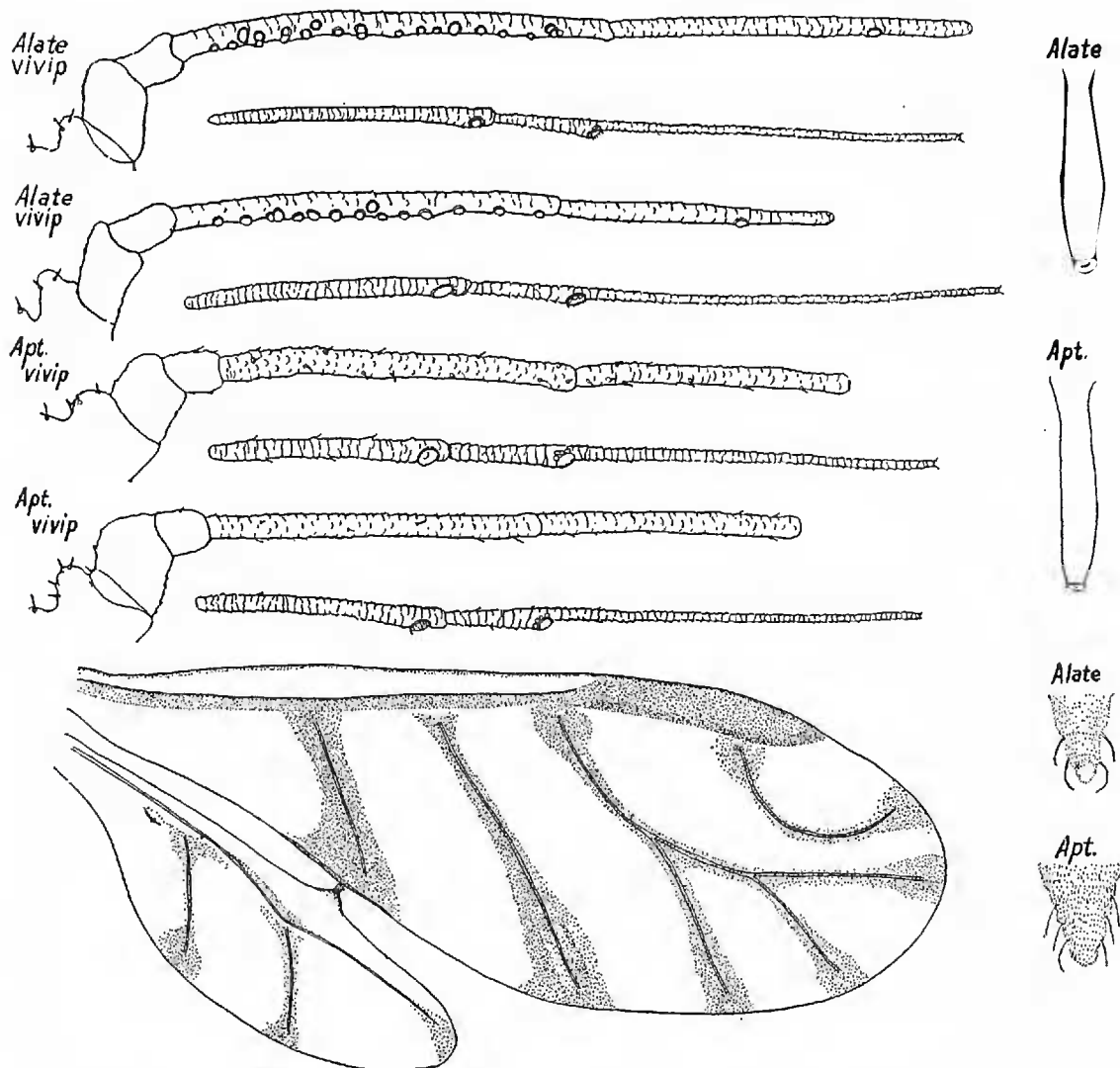


Fig. 3. The cloudy-veined marigold aphid, *Micromyzus oliveri* Essig, n. sp.

specimens of the same lot are to be found in several of the students' collections including that of Mr. Oliver.

#### KEY TO CALIFORNIA SPECIES OF MICROMYZUS

1. Antennal segment III with 15-21 subcircular and circular sensoria .....*oliveri* n. sp.
- ... Antennal segment III with 30 or more (30-35) subcircular and circular sensoria.....2
2. Antennal segment IV with 8-12 and V with 1-2 subcircular and circular sensoria.....*violæ* (Pergande)
- ... Antennal segment IV with 21-27 (rarely only 5-10) and V with 4-9 (usually 6) subcircular and circular sensoria.....  
.....*alliumcepa* n. sp.

#### REFERENCES

- Baker, A. C.  
 1919. *Neotoxoptera violæ* Theo., and its allies. Bul. Ent. Res., X(I):45-46. pl. I.  
 1920. Generic classification of the hemipterous family Aphididæ. U. S. Dept. Agr., Bul. 826:1-60 (Prof. Paper).
- Davis, J. J.  
 1909. Two new genera and species of Aphididæ. Ann. Ent. Soc. Am., 2:199-200, pl. 27.
- Del Guercio, G.  
 1911. Note afidologiche Intorno a due generi di afididi americani. Redia, 7:462-464.
- Essig, E. O.  
 1909. Aphididæ of Southern California. I. *Rhopalosiphum violæ* n. sp. Pomona Jour. Ent., 1:4-8, figs. 3, 4, 5, p. 47.
- Fullaway, D. T.  
 1910. Synopsis of Hawaiian Aphidæ. Hawaii Agr. Exp. Sta., Ann. Rept., 1909:22-25.
- Pergande, Theo.  
 1900. A new species of plant-louse injurious to violets. Can. Ent., 32:29-30.
- Theobald, F. V.  
 1915. African Aphididæ. Part II. Bul. Ent. Res., 6(II): 131-132, fig. 23.
- Van Der Goot, P.  
 1917. Zur kenntniss der Blattläuse Java's. Contribution à la Fauna des Indes Néerlandaises. 1(3):52-56.